

WHAT IS CLAIMED IS:

- 1 1. A method of updating parity data in a redundant array of independent disk
2 (RAID) clustered environment comprising:
 - 3 (a) locking parity data, without communicating with other nodes, for data
4 managed in SCSI (small computer systems interface) disks in a RAID clustered system,
5 wherein the locking prevents other nodes from modifying the parity;
 - 6 (b) reading the parity data;
 - 7 (c) generating new parity data by exclusive oring data from a first node and a
8 second node;
 - 9 (d) writing the parity data to a SCSI disk in the RAID system; and
10 (e) unlocking the parity data.
- 1 2. The method of claim 1, wherein the locking comprises issuing a RESERVE
2 command.
- 1 3. The method of claim 1, wherein the unlocking comprises issuing a RELEASE
2 command.
- 1 4. The method of claim 1, wherein the locking and reading steps are combined.
- 1 5. The method of claim 1, wherein the writing and unlocking steps are
2 combined.
- 1 6. The method of claim 1 wherein the RAID system is RAID-4.

1 7. The method of claim 1 wherein the RAID system is RAID-5.

1 8. The method of claim 1 wherein the RAID system is RAID-6.

1 9. An apparatus for updating parity data in a redundant array of independent
2 disk (RAID) clustered environment comprising:

3 (a) a plurality of SCSI (small computer systems interface) storage devices
4 organized in a RAID clustered system;

5 (b) data stored in the plurality of SCSI storage devices;

6 (b) a first node, operatively coupled to the SCSI storage devices, that manages
7 storage and retrieval of the data in the data storage devices, wherein the first node is
8 configured to:

9 (i) lock parity data without communicating with other nodes, wherein
10 the lock prevents other nodes from modifying the parity;

11 (ii) read the parity data;

12 (iii) generate new parity data by exclusive oring data from two nodes;

13 (iv) write the parity data to a SCSI disk in the RAID system; and

14 (v) unlock the parity data.

1 10. The apparatus of claim 9, wherein the first node locks the parity data by
2 issuing a RESERVE command.

1 11. The apparatus of claim 9, wherein the first node unlocks the parity data by
2 issuing a RELEASE command.

12. The apparatus of claim 9, wherein the first node is further configured to combine the logic for locking and reading.

13. The apparatus of claim 9, wherein the first node is further configured to combine the logic for writing and unlocking.

14. The apparatus of claim 9 wherein the RAID system is RAID-4.

15. The apparatus of claim 9 wherein the RAID system is RAID-5.

16. The apparatus of claim 9 wherein the RAID system is RAID-6.

17. An article of manufacture, embodying logic to perform method steps of updating parity data in a redundant array of independent disk (RAID) clustered environment, the method steps comprising the steps of:

(a) locking parity data without communicating with other nodes, wherein the locking prevents other nodes from modifying the parity;

(b) reading the parity data;

(c) generating new parity data by exclusive oring data from two nodes;

(d) writing the parity data to a SCSI (small computer systems interface) disk in the RAID system; and

(e) unlocking the parity data.

18. The article of manufacture of claim 17, wherein the locking comprises issuing a RESERVE command.

1 19. The article of manufacture of claim 17, wherein the unlocking comprises
2 issuing a RELEASE command.

1 20. The article of manufacture of claim 17, wherein the locking and reading steps
2 are combined.

1 21. The article of manufacture of claim 17, wherein the writing and unlocking
2 steps are combined.

1 22. The article of manufacture of claim 17 wherein the RAID system is RAID-4.

1 23. The article of manufacture of claim 17 wherein the RAID system is RAID-5.

1 24. The article of manufacture of claim 17 wherein the RAID system is RAID-6.